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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/673,234 | 09/30/2003 | Richard H. Breinlinger | SAA-65-1 | 1579 |
| 23569 | 7590 | 08/06/2004 | EXAMINER JAGAN, MIRELLYS | |
| SQUARE D COMPANY INTELLECTUAL PROPERTY DEPARTMENT 1415 SOUTH ROSELLE ROAD PALATINE, IL 60067 | | | ART UNIT 2859 | PAPER NUMBER |

DATE MAILED: 08/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/673,234 | Applicant(s) BREINLINGER, RICHARD H. | |
| | Examiner Mirellys Jagan | Art Unit 2859 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21, 23 and 28-33 is/are rejected.
- 7) ☒ Claim(s) 22 and 24-27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/30/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

1. The terminal disclaimer filed on 5/26/04 disclaiming the terminal portion of any patent granted on this application that would extend beyond the expiration date of U.S. Patent 6,679,628 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Objections

2. Claims 23 is objected to because of the following informalities:

In claim 23, there is lack of antecedent basis in the specification for the processor generating and outputting a "binary signal". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 29-33 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

In claim 29, the omitted structural cooperative relationship is between the processor unit and the claimed determining and storing means. The specification

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discloses that the processor unit is the means for determining (and storing) a temperature proximate the diode. Therefore, claim 29 lacks structural relationship between the determining and storing means and the processor unit since the claim states that the temperature proximate the diode is determined by means (determining and storing means) other than the processor unit.

Claims 30-33 are rejected for being dependent on rejected base claim 29.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 28 and 29 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 5,195,827 to Audy et al [hereinafter Audy].

Referring to claim 28, Audy discloses a method for measuring temperature by:
controlling a current source such that the source applies a first current to a diode (28) at a first point in time and applies a second current to the diode at a second point in time;

measuring a first analog voltage across the diode when the first current is applied to the diode to produce a first analog voltage measure, and measuring a second analog voltage across the diode when the second current is applied to the diode to produce a second analog voltage measure, and sequentially digitizing the first and second analog

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voltage measures with an integrated circuit comprising an analog to digital converter (digital voltmeter 26); and

determining a temperature proximate the diode based on only the first and second digitized voltage measures from the analog to digital converter (see figure 4; column 4, lines 44-50; and column 6, lines 14-16 and 56-60).

Referring to claim 29, Audy discloses a system comprising:

a temperature measuring diode (28);

a current source (I1 & I2);

a processor unit (36) coupled to the current source and having means (S1, S2) for controlling the current source such that the source applies the first current at a first point in time and applies the second current at a second point in time;

an analog-to-digital converter (digital voltmeter 26) for measuring a first analog voltage across the diode when the first current is applied to the diode and for measuring a second analog voltage across the diode when the second current is applied to the diode, and for sequentially digitizing the first and second analog voltage measurements with an integrated circuit; and

wherein the processor unit has means for determining, and means for storing (a memory must inherently be present in order for the processor to function as disclosed in Audy), a temperature proximate the diode based on only the first and second digitized measures from the analog to digital converter.

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7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Audy in view of U.S. Patent 6,554,469 to Thomson et al [hereinafter Thomson].

Audy discloses a system comprising:

a processor unit (36);

a temperature measurement diode (28);

an integrated circuit coupled to the diode and the processor unit, the circuit comprising a digital to analog converter (40) configured to sequentially convert digital signals from a digital voltmeter (26) into analog signals, wherein the voltmeter digitizes analog voltage signals provided by the diode; and

a current source coupled to the diode and configured to generate a first current (I1) and a second current (I2) different from the first current;

wherein the processor unit is coupled to the current source and the converter, and is configured to:

control the current source such that the source applies the first current at a first point in time and applies the second current at a second point in time,

obtain an analog measure of a first voltage across the diode from the converter when the first current is applied to the diode,

obtain an analog measure of a second voltage across the diode from the converter when the second current is applied to the diode, and

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determine a temperature proximate the diode based only on the first and second analog measures (see figure 4; column 6, lines 14-16 and 39-62).

Audy does not disclose the voltmeter providing the digital signals directly to the processor unit, wherein the processor unit uses the digital voltage signals to determine the temperature.

Thomson discloses a system for measuring temperature. The system comprises a p-n junction temperature sensor (10) and a current source coupled to the sensor and configured to generate a first current (I1) and a second current (I2) different from the first current to the sensor. The system has a circuit to convert the analog voltage signals from the sensor into a digital signal, and a processor unit that obtains the digital voltage signals and uses the digital signals to calculate the temperature (see figures 1 and 4; column 4, lines 35-59; and column 5, lines 1-6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Audy by replacing the processor unit and the DAC with a digital processor, as taught by Thomson, in order to process the digital signals directly from the digital voltmeter and thereby minimize the number of parts in the system and reduce manufacturing costs.

9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Audy and Thomson, as applied to claim 21 above, and further in view of U.S. Patent 4,123,938 to Hamilton.

Audy and Thomson disclose a system having all of the limitations of claim 23, as stated above in paragraph 8, except for the system comprising a binary processor configured to generate a binary signal corresponding to the temperature.

Hamilton discloses a system for measuring temperatures using a diode as a temperature sensor. Hamilton teaches that it is useful to provide a binary processor configured to generate a binary signal corresponding to a digital temperature signal in order to display the temperature.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Audy and Thomson by adding a binary processor, as taught by Hamilton, in order to display the temperature.

10. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Audy in view of Hamilton.

Audy discloses a system having all of the limitations of claim 30, as stated above in paragraph 6, except for the system comprising means for producing a binary output corresponding to the temperature.

Hamilton discloses a system for measuring temperatures using a diode as a temperature sensor. Hamilton teaches that it is useful to provide a binary processor configured to generate a binary signal corresponding to a digital temperature signal in order to display the temperature.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system disclosed by Audy by adding a binary processor, as taught by Hamilton, in order to display the temperature.

Allowable Subject Matter

11. Claims 22 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 24, 25, and 27 would be allowable due to their dependence on claim 22.

12. Claim 31 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action, and amended to include all of the limitations of base claim 29. Claims 32 and 33 would be allowable due to their dependence on claim 31.

13. The Examiner's statement of reasons for the indication of allowable subject matter can be found in the Office action mailed 3/26/04.

Response to Arguments

14. Applicant's arguments with respect to the Audy reference have been considered but are not persuasive. Applicant's arguments that Audy fails to disclose the use of only two measurements to determine a temperature are not persuasive since Audy states in column 4, lines 44-50, that only two measurements may be used.

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15. Applicant's arguments with respect to Thomson have been fully considered but are moot since the rejection of claims 21, 28, and 29 over Thomson in view of Audy has been overcome by the amendment.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mirellys Jagan whose telephone number is 571-272-2247. The examiner can normally be reached on Monday-Thursday from 8AM to 4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571-272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJ
August 3, 2004



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